

Patent Claims:

1. Method for controlling a vehicle brake system with active hydraulic brake force boosting,
c h a r a c t e r i z e d in that an active pressure-increasing unit and/or a pressure modulation unit is actuated according to a comparison of a nominal pressure or a nominal vehicle speed or quantities derived therefrom, in particular a nominal vehicle acceleration, with an actual pressure or an actual vehicle speed or quantities derived therefrom, in particular an actual vehicle acceleration.
2. Method as claimed in claim 1,
c h a r a c t e r i z e d in that when the pressure-increasing unit is actuated for brake pressure increase purposes, the nominal pressure is compared to an actual pressure or the nominal vehicle acceleration is compared to an actual vehicle acceleration, and in that when the nominal pressure exceeds the actual pressure or when the nominal vehicle acceleration is lower than the actual vehicle acceleration, the pressure-increasing unit is actuated to generate additional pressure.
3. Method as claimed in claim 2,
c h a r a c t e r i z e d in that the pressure-increasing unit is actuated to produce an additional pressure when the nominal pressure is higher than the actual pressure or the nominal vehicle acceleration is lower than the actual vehicle acceleration for a predetermined period of time, preferably 50 to 100 msec or

after five to ten actuations of the pressure-increasing unit.

4. Method as claimed in any one of claims 1 to 3,
c h a r a c t e r i z e d in that in order to produce additional pressure or to produce an additional negative vehicle acceleration, the pressure-increasing unit extends the pump actuation time by 30 % to 100 %, preferably by about 50 %, with respect to the original pump actuation time when the nominal pressure is higher than the actual pressure or the nominal vehicle acceleration is lower than the actual vehicle acceleration.
5. Method as claimed in any one of claims 1 to 4,
c h a r a c t e r i z e d in that the pressure-increasing unit is actuated to generate additional pressure when the nominal pressure is higher than the actual pressure by at least 20 % to 50 %, preferably by roughly 30 %, with respect to the nominal pressure, or when the nominal vehicle acceleration is lower than the actual vehicle acceleration by at least 40 % to 60 %, preferably by roughly 50 %, with respect to the nominal vehicle acceleration.
6. Method as claimed in any one of claims 1 to 5,
c h a r a c t e r i z e d in that the pressure-increasing unit for producing an additional pressure or for producing an additional negative vehicle acceleration extends the pump actuation time by 200 % to 400 %, preferably by roughly 200 %, with respect to the original pump actuation time when the condition that the nominal pressure is higher than the actual pressure or the nominal vehicle acceleration is lower than the actual vehicle

acceleration was detected several times in succession, preferably at least two times.

7. Method as claimed in any one of claims 1 to 6,
c h a r a c t e r i z e d in that when the pressure modulation unit, like an hydraulic valve, preferably an analogized valve, is actuated to produce an additional pressure reduction, the nominal pressure is compared with an actual pressure or the nominal vehicle acceleration is compared with an actual vehicle acceleration, and in that the pressure modulation unit is actuated to produce an additional pressure when the nominal pressure is lower than the actual pressure or when the nominal vehicle acceleration is higher than the actual vehicle acceleration.
8. Method as claimed in claim 7,
c h a r a c t e r i z e d in that the pressure modulation unit is actuated to produce an additional pressure reduction when the nominal pressure is lower than the actual pressure or the nominal vehicle acceleration is higher than the actual vehicle acceleration for a predefined period of time, preferably 50 to 100 msec or after five to ten actuations of the pressure modulation unit.
9. Method as claimed in any one of claims 1 to 8,
c h a r a c t e r i z e d in that the pressure modulation unit, like an hydraulic valve, preferably an analogized valve, increases the valve actuation current strength by 30 % to 100 %, preferably by roughly 50 %, with respect to the original valve actuation current strength for producing an additional pressure reduction

when the nominal pressure is lower than the actual pressure or when the nominal vehicle acceleration is higher than the actual vehicle acceleration.

10. Method as claimed in any one of claims 1 to 9,
c h a r a c t e r i z e d in that the pressure modulation unit, like an hydraulic valve, preferably an analogized valve, is actuated to produce an additional pressure reduction, when the nominal pressure is lower than the actual pressure by at least 20 % to 50 %, preferably by roughly 30 %, or when the nominal vehicle acceleration is higher than the actual vehicle acceleration by at least 40 % to 60%, preferably by roughly 50 % with respect to the nominal vehicle acceleration.
11. Method as claimed in any one of claims 1 to 10,
c h a r a c t e r i z e d in that the pressure modulation unit, like an hydraulic valve, preferably an analogized valve, increases the valve actuation current strength by 200 % to 400 %, preferably by roughly 200 %, with respect to the original valve actuation current strength for producing an additional pressure reduction when the condition that the nominal pressure is lower than the actual pressure or the nominal vehicle acceleration is higher than the actual vehicle acceleration was detected several times in succession, preferably at least two times.
12. Method as claimed in any one of claims 1 to 11,
c h a r a c t e r i z e d in that a modified actuation of the pressure-generating unit and/or the pressure

modulation unit is memorized for an ignition cycle, that means until the ignition of the vehicle is switched off.

13. Method as claimed in any one of claims 1 to 12, characterized in that the method is a program or part of a program of a control and regulating program of a vehicle brake system, and in that modifications of the actuation of the pressure-generating unit or the pressure modulation unit will not take place until three to ten program runs have been executed or upon expiry of a period of 50 to 100 msec or when at least five to ten actuations of the pump or the valve have already been executed.
14. Device for controlling a vehicle brake system with active hydraulic brake force boosting, including an actuating unit by means of which the driver can introduce brake pressure into a hydraulic unit, with at least one wheel brake that is connected to the actuating unit by way of the hydraulic unit containing at least one brake line, with a pump communicating with its suction side with the actuating unit by way of a change-over valve and communicating with its pressure side with the brake line, with an actuatable inlet valve arranged in the brake line, with an actuatable separating valve interposed between the inlet valve and the actuating unit, with an actuatable outlet valve arranged in a return line, with a pressure sensor associated with the actuating unit, with a wheel speed sensor and with a first actuating unit for actuating the pump that introduces pressure into the wheel brakes for active brake force boosting when a point of maximum boosting of the brake booster is reached or exceeded,

c h a r a c t e r i z e d by a first determining unit for determining a nominal pressure or a nominal vehicle acceleration that corresponds to the pressure according to the pressure sensor signal, a second determining unit for determining an actual vehicle acceleration or an actual pressure that corresponds to the vehicle acceleration according to the wheel speed sensor signal, a comparison unit for comparing the nominal pressure with the actual pressure or the actual vehicle acceleration with the nominal vehicle acceleration, a second evaluating unit for actuating the pump or the separating valve according to the comparison, wherein when the nominal pressure is higher than the actual pressure or when the nominal vehicle acceleration is lower than the actual vehicle acceleration, the pump is actuated for the purpose of generating additional pressure, and when the nominal pressure is lower than the actual pressure or when the nominal vehicle acceleration is higher than the actual vehicle acceleration, the separating valve is actuated for producing an additional pressure reduction.